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The pedagogical design of a badged open course on the 'Scholarship of Teaching and Learning in STEM'

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The pedagogical design of a badged open course on the 'Scholarship of Teaching and Learning in STEM'



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Tuesday, 2nd November 2021

Outline

- Introduction
 - Motivations for developing this Badged Open Course
 - Scholarship of Teaching and Learning (SoTL) and its role in academic practice
- The Badged Open Course (BOC) on SoTL in STEM
- Pedagogical design of the BOC
 - Principles and concepts of SoTL
 - A reflective framework for a planning a SoTL inquiry
 - An impact evaluation framework to facilitate the uptake of the SoTL findings
- Questions / discussion



Motivations for this BOC

- **Need**: for a resource that brings the entire process of planning, conducting and evaluating a SoTL inquiry together along with the underpinning principles, practices and frameworks
- **Stages of a SoTL inquiry**: Used to structure the BOC, providing a systematic and structured process of planning, conducting and evaluating SoTL (re-visited in the 'Conclusions' of the BOC)
- **Access**: to be able to access resources as and when required rather than wait for staff development sessions which may not be available at the time a colleague is looking for help
- **Self-directed**: instilling the motivation for SoTL; a consolidated resource that guides systematic and ethically-reasoned SoTL practice

Defining SoTL

- The Scholarship of Teaching and Learning (SoTL) involves educators moving **beyond reflection** upon their teaching strategies to an **intentional, rigorous, systematic and ethically reasoned inquiry** to investigate teaching practices and pedagogical strategies for student learning and engagement
- In the BOC, we define SoTL as
 - “The systematic and ethically reasoned investigation of aspects of teaching and student learning by applying disciplinary knowledge, resulting in reflections and outcomes that are publicly shared for peer-review and for others to build upon”

SoTL beginnings

- Hutchings and Shulman ([1999](#)) assert that SoTL is not synonymous with excellent teaching, but it is a condition for excellent teaching
 - “...the scholarship of teaching is a condition - as yet a mostly absent condition - for excellent teaching. It is the mechanism through which the profession of teaching itself advances, through which teaching can be something other than a seat-of-the-pants operation, with each of us out there making it up as we go. **As such, the scholarship of teaching has the potential to serve all teachers and students.**
 - ...a kind of “going meta” in which faculty frame and systematically investigate questions related to student learning – the conditions under which it occurs, what it looks like, how to deepen it, and so forth – and **to do so with an eye not only to improving their own classroom but to advancing practice beyond it.**” ([Hutchings and Shulman, 1999](#))

Key components of SoTL in STEM BOC

- Six sessions (24 hours of study)

1. Engaging with SoTL

2. Getting started
with SoTL

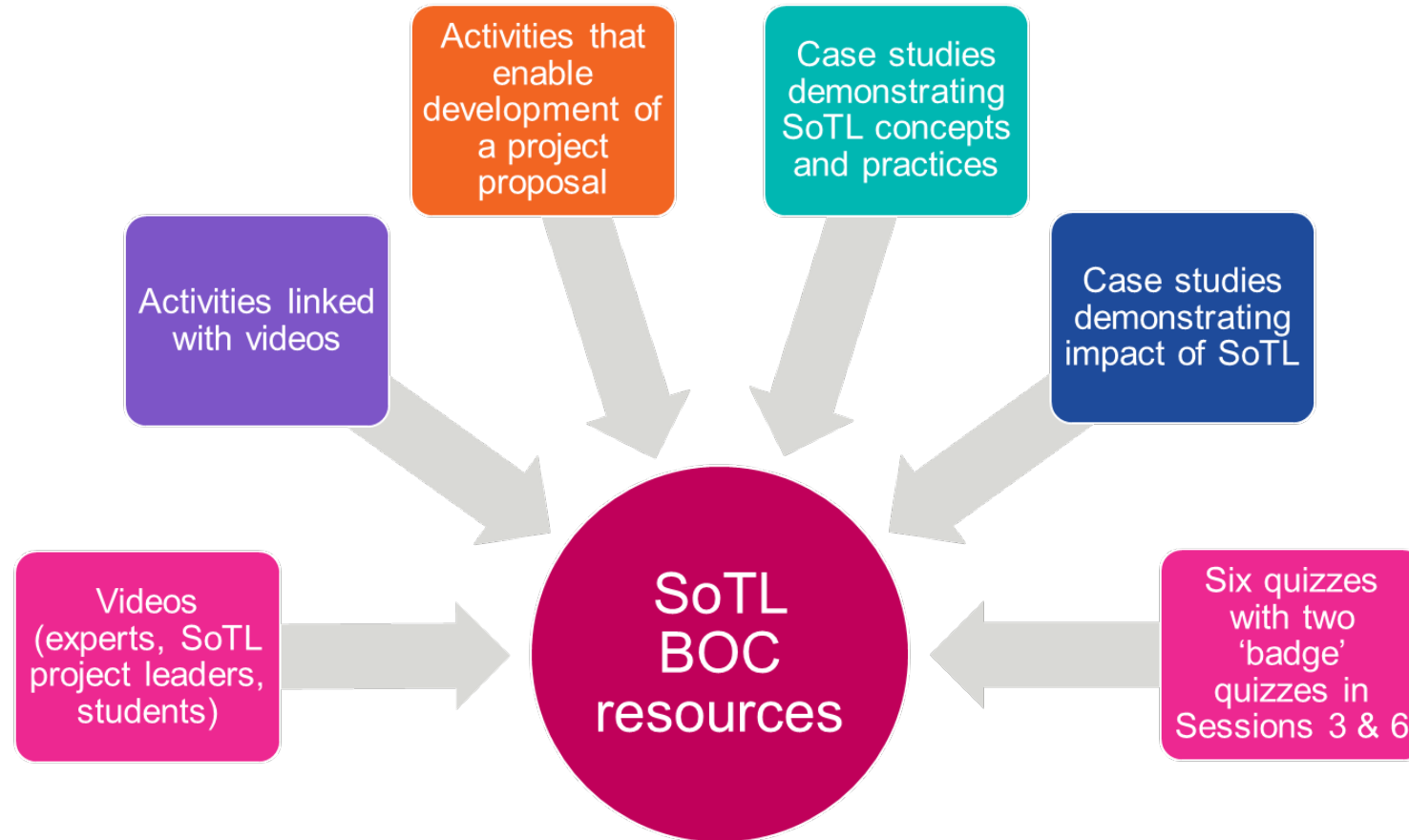
3. Formulating a
SoTL inquiry

4. Students as partners
and ethical considerations
in SoTL research

5. Planning and
conducting SoTL

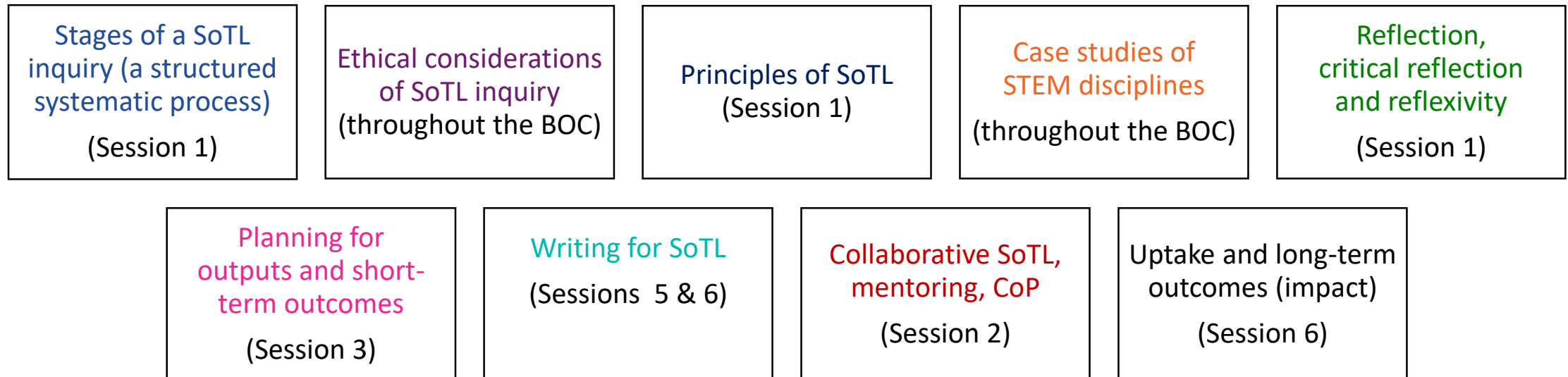
6. Making SoTL public and
impact evaluation of SoTL

SoTL in STEM BOC Resources



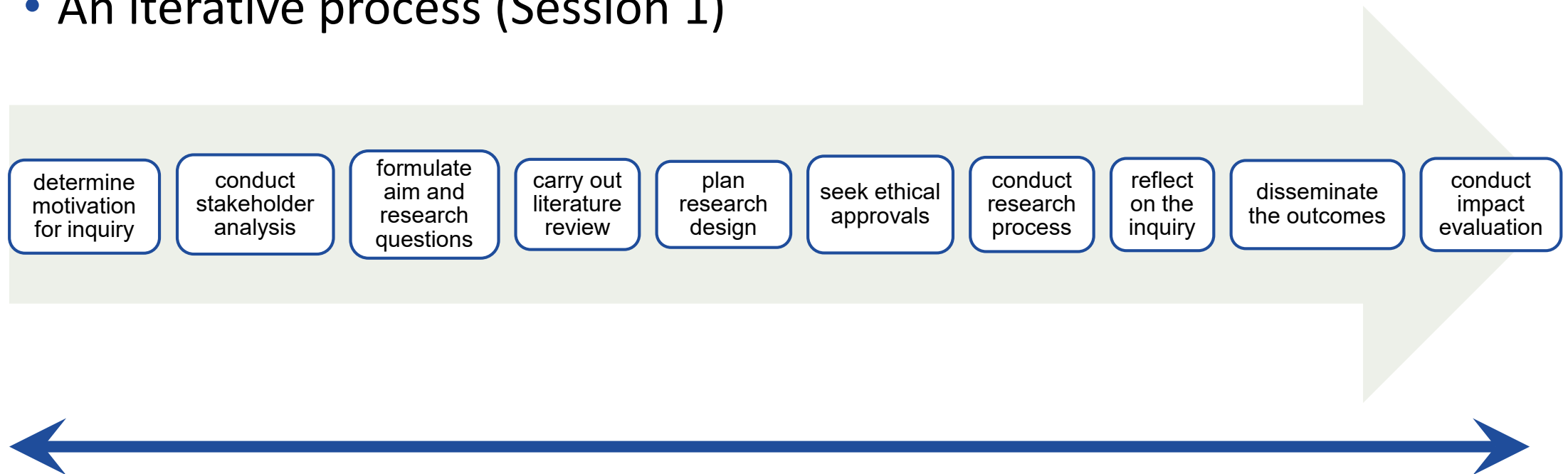
Principles and concepts of SoTL

- SoTL is systematic and ethically reasoned investigation of aspects of teaching and student learning by applying disciplinary knowledge, resulting in reflections and outcomes that are publicly shared for peer-review and for others to build upon.



Stages of a SoTL inquiry

- An iterative process (Session 1)



Iteration(s) at each stage accompanied with continued reflection; moving back and forward through the stages, as per the requirements of the SoTL inquiry

Stages of a SoTL inquiry in Session 1 of the BOC, <https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=109160§ion=4>

Principles of SoTL

1. Inquiry focused on student learning and engagement
2. Grounded in context
3. Rigorous and methodologically sound research design
4. Conducted in partnership with students
5. Appropriately public for evaluation and uptake by peers
6. Reflection, critical reflection and reflexivity

Principles of SoTL in Session 1 of the BOC

<https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=109160§ion=2>

Instilling reflective practice



reflection

critical
reflection

reflexivity

Reflection, critical reflection and reflexivity in Session 1 of the BOC

<https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=109160§ion=3>

Seven-criteria to guide inquiry design

- Question-driven structured framework, Session 3
 1. Clear goals
 2. Adequate preparation
 3. Appropriate methods
 4. Significant results
 5. Effective communication
 6. Reflective critique
 7. Going public

Designing a SoTL inquiry in Session 3 of the BOC

<https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=109157§ion=4>

Impact of SoTL

- Impact of a SoTL project implies **demonstrable benefits** to learning and teaching that are directly attributable to that project.
- Impact of SoTL activity is usually judged against two aspects, **significance and reach**: how significant are the benefits of the SoTL project and for whom?, and how far-reaching are the outcomes of the SoTL project?
- **Evaluation for impact**: evaluation of a SoTL project for impact will involve finding out who has benefited from SoTL and how, and to collect evidence related to significance and reach.

Making SoTL public in Session 6 of the BOC

<https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=109326>

Impact Evaluation Framework for SoTL

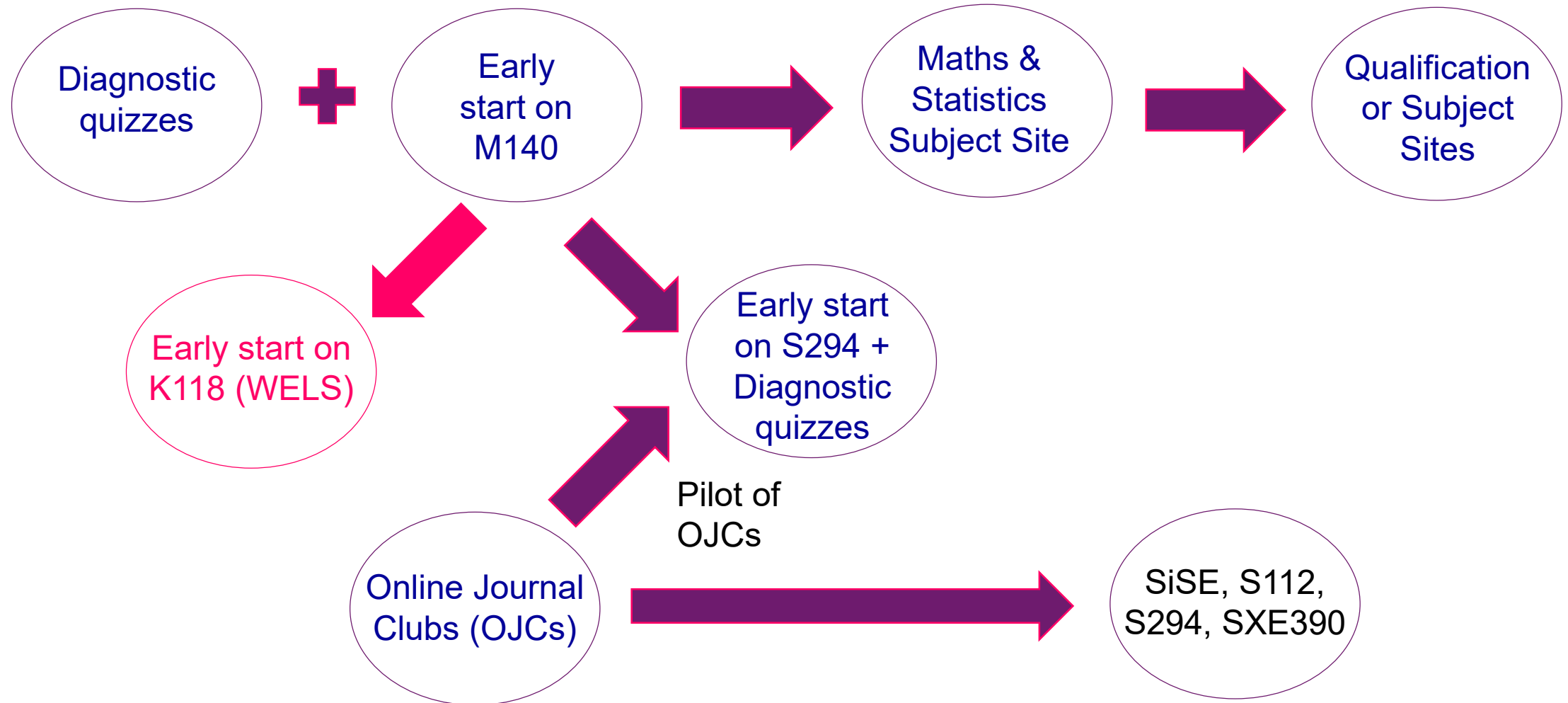


- **Learning and teaching**
 - the impact on student experience?
 - the impact on student retention and progression?
 - evidence of excellence in teaching?
- **Transfer to others**
 - influence on discipline-based teaching, research and practice?
 - dissemination of the project's outcomes?
 - outcomes of the project adopted by other educators?
- **Stakeholder benefits**
 - enhanced mutual stakeholder understanding?
 - facilitated personal and professional development of project team and stakeholders?
 - led to recognition of project team members and other stakeholders?
- **Cultural and economic benefits**
 - helped to foster SoTL culture?
 - had any financial implications?
 - led to funding opportunities?

Evaluating for impact in Session 6 of the BOC

<https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=109326§ion=2.3>

Evaluate, integrate and transfer



Link and contacts

- Scholarship of Teaching and Learning in STEM
 - <https://www.open.ac.uk/scholarship-of-teaching-and-learning-in-STEM>
- Contacts
 - Presenters
 - trevor.collins@open.ac.uk
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 - eSTEeM
 - esteem@open.ac.uk



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- Case studies and videos of SoTL projects
 - OU STEM colleagues
- Course image
 - Johnny Greig (Getty Images)



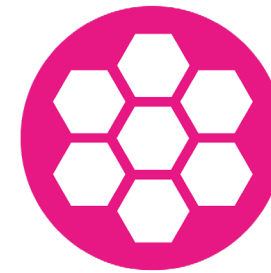
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